

RESEARCH, DEVELOPMENT & TECHNOLOGY TRANSFER QUARTERLY PROGRESS REPORT

Wisconsin Department of Transportation
DT1241 4/2010

INSTRUCTIONS:

Research project investigators and/or project managers should complete a quarterly progress report (QPR) for each calendar quarter during which the projects are active.

WisDOT research program category: <input type="checkbox"/> Policy research <input type="checkbox"/> Other		<input checked="" type="checkbox"/> Wisconsin Highway Research Program <input type="checkbox"/> Pooled fund TPF#	Report period year: 2011 <input type="checkbox"/> Quarter 1 (Jan 1 – Mar 31) <input type="checkbox"/> Quarter 2 (Apr 1 – Jun 30) <input type="checkbox"/> Quarter 3 (Jul 1 – Sep 30) <input checked="" type="checkbox"/> Quarter 4 (Oct 1 – Dec 31)
Project title: Foundation Movement for Transportation Structures			
Project investigator: Dante Fratta		Phone: 608-265-5644	E-mail: fratta@wisc.edu
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WisDOT contact: Robert Arndorder		Phone: 608-246-7940	E-mail:
WisDOT project ID: 0092-09-05	Other project ID:	Project start date: 2/5/2009	
Original end date: 2/5/2012	Current end date: 2/5/2012	Number of extensions: 0	

Project schedule status:

☐ On schedule ☐ On revised schedule ☐ Ahead of schedule ☒ Behind schedule

Project budget status:

Total Project Budget	Expenditures Current Quarter	Total Expenditures	% Funds Expended	% Work Completed
\$109,893.00	\$4,613.00	\$67,895.00	61%	55%

Project description:

The overall research objective of this study is to produce a document summarizing simplified design procedures for evaluation of foundation movements for transportation structures within the LRFD framework. Recommendations for the measurement methods of input parameters for those design procedures will also be provided.

Progress this quarter (includes meetings, work plan status, contract status, significant progress, etc.):

- Continued monitoring of load measurements at each of the sites and analysis of existing data.
- Two new installations of instruments to measure deformations in a column and in an abutment at a new fourth site.
- The collected data were reduced and one of the students assigned to this project is completing her thesis. She is expected to defend her thesis during the Spring 2012 semester.
- As part of her work, this master student evaluated the literature research and completed an inclinometer analysis for instrumenting future sites. The MEMS accelerometers selected at the beginning of this project do not have the sensitivity needed to measure the small deformations expected in the instrumented bridges.

Anticipated work next quarter:

- Continued analysis and collection of data, including surveying of the four existing sites. These sites include the following

bridges: Layton Avenue (bridge 40-0820), Lien Road & I90-39 (bridge B-13-541), St. Highway 164 (bridge 67-0325), and Co. Road P & I-94. In each of the bridges piers have been instrumented and in two of the bridges, abutments have also been instrumented other strain gauges. A senior undergraduate student is participating in the data collection and reduction.

- We have procured a new set of instruments that are ready to be installed if new sites become available (a new new bridge did not become available in Fall 2011).
- We will recruit another advanced undergrad student to make faster progress toward the completion of the study. We plan to run numerical simulations to justify the collected field measurements.

Circumstances affecting project or budget:

- We have been having problems getting access to sites for instrumentation. Only one new site was available during the Summer 2011 and the instrumentation and data collection began during the Summer/Fall 2011 period.
- A new principal investigator was assigned to this project when Prof. Schneider left the university in Summer 2011. Prof. Fratta started as new PI in Fall 2012. As part of this transition we discussed and agreed with WisDOT officials the need for a non-cost extension for this project.

Original GANTT Chart: See attached document

Attach / insert Gantt chart and other project documentation

FOR WISDOT USE ONLY

Staff receiving QPR:	Date received:
Staff approving QPR:	Date approved: